

SUPPORT FOR THE AMENDMENTS

Claims 2-4 have been canceled.

Claim 1 has been amended.

The amendment of Claim 1 is supported by original Claims 1-4.

No new matter has been entered by the present amendment.

REMARKS

Claims 1 and 5-10 are pending in the present application.

The rejection of Claims 1-10 under 35 U.S.C. §103(a) over Roewer et al (US 5,716,590) in view of Corbin et al (US 5,600,040) is respectfully traversed.

Applicants continue to disagree with the Examiner for the reasons of record. Specifically, Applicants maintain that there is nothing in either Roewer et al or Corbin et al to support the Examiner's alleged obviousness position with respect to the replacement of a transition metal in the catalyst system of Roewer et al with an alkaline earth element disclosed by Corbin et al.

As recognized by the Examiner, the claimed method differs from the disclosure of Roewer et al in that this reference does not disclose or suggest the claimed method by using "at least one metal or metal salt selected from among the elements of main group 2 of the Periodic Table of the Elements... as catalyst at a temperature in the range from 300 to 1000°C".

The Examiner cites Corbin et al as allegedly providing motivation to utilize a Group 2 element in a catalytic hydrodehalogenation reaction. This allegation is based on the Examiner's allegation that Corbin et al disclose a "process to separate HFC-134 isomers (HFC-134 or HFC-134a by hydrodehalogenation).

Applicants respectfully submit that the Examiner's characterization of Corbin et al as disclosing catalytic hydrodehalogenation is incorrect. Certainly, at no point does Corbin et al disclose a catalyst system containing an alkaline earth element as alleged by the Examiner. On the contrary, Corbin et al specifically discloses that their invention relates to the separation of these C<sub>2</sub>H<sub>2</sub>F<sub>4</sub> isomers from a mixture of the same by preferential sorption on

certain activated carbons and inorganic molecular sieves at a temperature and pressure suitable for sorption (see, for example, column 2, lines 46-65).

In fact, Corbin et al goes so far as to state that the  $C_2H_2F_4$  isomers mixture “may result, for example, from a process involving the reaction of the CFC-114 and/or CFC-114a isomers with hydrogen” (column 2, line 66 to column 3, line 1). Thus, it is clear that Corbin et al treat the hydrodehalogenation reaction as a distinct step from separation. In other words, in the disclosure of Corbin et al the alkaline earth metals are not present in the hydrodehalogenation reaction step.

Accordingly, even if the artisan were to combine the disclosures of Roewer et al and Corbin et al, the motivation would not be to substitute the transition metal in the catalyst system of Roewer et al with an alkaline earth element disclosed by Corbin et al as alleged by the Examiner. The motivation instead would be to add the separation step disclosed by Corbin et al after the hydrodehalogenation reaction step disclosed by Roewer et al. However, this is not what Applicants claim.

Further, with respect to Roewer et al (US 5,716,590), which corresponds to EP 0 658 359 A2, the Examiner is reminded of the discussion at page 1, lines 13-25 of the present specification, which states:

Various catalysts and the process for converting  $SiCl_4$  to  $HSiCl_3$  in the presence of hydrogen have been known for a long time.

Thus, EP 0 658 359 A2, for example, discloses a process for the catalytic hydrodehalogenation of  $SiCl_4$  to  $HSiCl_3$  in the presence of hydrogen, in which finely divided transition metals or transition metal compounds selected from the group consisting of nickel, copper, iron, cobalt, molybdenum, palladium, platinum, rhenium, cerium and lanthanum are used as unsupported catalysts, these are able to form silicides with elemental silicon or silicon compounds. Problems are, as a result of the strongly endothermic nature of the reaction, the indirect introduction of the heat of reaction and the sintering of the catalyst particles, associated with a drop in activity. In addition, separation of the used finely divided catalysts from the product mixture represents a considerable expense.

Indeed, from the foregoing, it is clear that the present invention provides an advantage over Roewer et al in that the catalytic hydrodehalogenation of  $\text{SiCl}_4$  to  $\text{HSiCl}_3$  in the presence of hydrogen can be conducted at reduced expense and without the activity drop associated with the strongly endothermic nature of the reaction, the indirect introduction of the heat of reaction and the sintering of the catalyst particles that plagued the method of Roewer et, which utilized finely divided transition metals or transition metal compounds selected from the group consisting of nickel, copper, iron, cobalt, molybdenum, palladium, platinum, rhenium, cerium and lanthanum as unsupported catalysts.

Moreover, with respect to the temperature, at column 5, lines 13-14, Corbin et al specifically disclose that sorption temperatures range from  $-20^\circ\text{C}$  to  $300^\circ\text{C}$  and all Examples are performed at less than  $300^\circ\text{C}$  (i.e., at a temperature that is preferably lower than the claimed temperature of catalysis).

Accordingly, Applicants again submit that there is nothing in the cited art that would lead the artisan to any realization that transition metals will be comparable to group 2 metals or group 2 salts with respect to catalytic ability for hydrohalogenation as presently claimed.

Nonetheless, solely to expedite examination of the present application, Applicants have amended Claim 1 to require that the claimed process for preparing trichlorosilan ( $\text{HSiCl}_3$ ) by catalytic hydrodehalogenation of silicon tetrachloride ( $\text{SiCl}_4$ ) is in the presence of hydrogen and a supported catalyst at a temperature in the range from 300 to  $1000^\circ\text{C}$ , where the supported catalyst contains at least one metal or metal salt selected from the group consisting of calcium, strontium, barium, calcium chloride, strontium chloride, and barium chloride, and the at least one metal or metal salt has been applied to a support selected from the group consisting of leached glass, fused silica, a porous siliceous support and a  $\text{SiO}_2$

support. Neither Roewer et al nor Corbin et al disclose the claimed method with a supported catalyst within the scope of the claimed invention.

In view of the foregoing, Applicants respectfully request withdrawal of this ground of rejection.

Applicants submit that the present application is now in condition for allowance.  
Early notification of such action is earnestly solicited.

Respectfully submitted,

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